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The Effects of Early Intervention on Children with Autism Spectrum Disorders

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THE EFFECTS OF EARLY INTERVENTION ON CHILDREN WITH AUTISM
SPECTRUM DISORDERS

by

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A Research Paper

Submitted in Partial Fulfillment of the Requirements for the
Master of Science Degree

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RESEARCH PAPER APPROVAL

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A Research Paper Submitted in Partial

Fulfillment of the Requirements

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in the field of Communication Disorders and Sciences

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Introduction

Within recent decades the chances of a child being diagnosed with autism spectrum disorder has increased dramatically. Some believe this is due to the increased recognition of an autism spectrum disorder in doctors as well as parents/caregivers, teachers and other individuals that may work with children. According to Centers for Disease Control and Prevention 2010, autism spectrum disorder (ASD) is a group of developmental disabilities that can cause significant social, communication and behavioral challenges. Because delays are pervasive, early intervention (EI) programming is becoming a common tool used to counteract the challenges that may occur due to the delays.

According to Schumway and Wetherby, (2009) the second year of life is a critical time to examine the early development and emerging symptoms of ASD with the hope that EI can preempt significant symptoms (pg.1140). Due to this recent knowledge, it is critical to not only identify the disorder early, but also begin to receive various early intervention services in a timely manner.

Early intervention is a combination of services such as but not limited to occupational therapy, speech and language therapy, physical therapy, developmental therapy, psychological services, and social work services. Although all of these

services are available, depending on the specific child, services will be chosen accordingly. Each child who receives early intervention services is assessed under three categories being "(a) child has a developmental delay, (b) child has a diagnosed medical or physical condition with a high probability of leading to developmental delay, and (c) child is at risk of developmental delay (the final category is up to the state's discretion)" (Boyd & Shaw, 2010 pg. 215). Children are evaluated and if they qualify under a category listed above, receive an Individualized Family Service Plan (IFSP). The IFSP details specific services, goals, and strategies created and implemented by not only the therapists, but family members as well. Although the typical age of diagnosis for an autism spectrum disorder is older than three years of age, due to the advancement in assessments children are being diagnosed as young as two years of age and younger, allowing for early intervention services (Schertz, H. H., Baker, C., Hurwitz, S., & Benner, L., 2011).

I am reviewing the literature about the effectiveness of early intervention services on children with autism spectrum disorders. The reason I am reviewing this is because I want to find out how effective early intervention services are and what services if any, might be more effective in increasing quality of life for people with autism spectrum disorders and their families.

Prevalence of Autism Spectrum Disorders

In 1980 the American Psychiatric Association (APA) came up with a specific definition for autism

Three key areas of developmental problems in children diagnosed with autism spectrum disorders: (a) impairment in social interaction (such as impaired nonverbal behaviors, poor peer relationships, difficulty sharing enjoyment and interests with others) and a lack of social or emotional reciprocity; (b) severe delays or lack of language communication skills, impaired ability to initiate or sustain conversation with others, repetitive use of language, and lack of appropriate social imitative play; and (c) repetitive and stereotyped patterns of behavior, interest, and activities including, inflexible adherence to routines or rituals, stereotyped and repetitive motor mannerisms, and persistent preoccupation with parts of objects (Phetrasuwan, Miles, and Mesibov, 2009, p. 206).

The American Psychological Association classifies autism spectrum disorders as a neurobiological disorder that impairs social interaction and communication along with restricted, repetitive, and stereotyped patterns of behaviors (as cited in Stahmer and Aarons, 2009). These signs typically show up after a period of what appears to be typical development. This is known as "autistic regression" and is usually reported by the

caregiver because of loss of language skills by the child often around the age of two (Boyd & Shaw, 2010). Since autism spectrum disorder is on a spectrum, the severity of each case is on a continuum ranging from high functioning autism to very severe cases (Boyd, Odom, Humphreys, and Sam, 2010). High functioning autism usually is associated with impaired social communication aspects, while on the opposite end of the continuum the more severe cases of autism limit any kind of communication.

Rice (2007) stated the current number of children being diagnosed with autism is 1 in every 150 with boys being affected 3 to 4 times more than girls, (as cited in Boyd et al., 2010). There currently is no supporting evidence showing that autism is more likely to occur in a specific race or socioeconomic class due to the fact that it is found within multiple races as well as socioeconomic classes (Boyd et al., 2010). Although autism spectrum disorder (ASD) is speculated to occur because of different factors including environmental as well as developmental factors, at this present time there is not a specific etiology linked to the disorder. Without a cure or preventative measures, early intervention services are essential to help minimize behaviors and decrease areas of delay within this population.

Benefits of Early Identification that leads into Early Intervention

Because early identification is the basis of early intervention, one must consider how this early identification or diagnosis of autism could potentially change the outcome of how a young child with autism will learn and communicate in today's world. Since communication is usually significantly impacted in individuals with autism, I believe by identifying autism and providing early intervention support earlier will decrease developmental delays resulting in an improvement of overall quality of life. Articles that examine this process have been included to determine if this claim is valid.

In recent years, the typical age for children to be diagnosed with autism was at least three years of age (Schertz et al., 2011). With the recent rise in awareness of symptoms of autism, children two years of age and younger are being diagnosed with more success (Schertz et al., 2011). With increased awareness and diagnosis, early intervention programs have been made more readily available to those in need. EI has successfully promoted early pre-linguistic skills, such as joint attention, which is said to be the foundation of language (Schertz et al., 2011). The National Resource Council (2001) reported that the earlier that intervention begins in children's lives the better the outcomes (Boyd et al., 2010). The rationale

for this is that children's brains are constantly growing and have a great deal of plasticity while young making it more likely for the child to improve areas that are delayed due to autism (Landa, 2007). By implementing new behaviors through early intervention programs, children with autism will have significant improvement in developmental delays (Landa, 2007).

Wetherby and Woods, 2006 stated "researchers have suggested that the age of entry into intervention is predictive of outcome. Children with ASD who participated in intensive interventions by 3.5 years of age had significantly better outcomes than their peers with ASD who received such interventions after age 5" (pg 67). In a two week pilot, 17 children in the ages of 17-36 months, who were recently diagnosed with having autism, were involved in therapy that focused on three key areas that are typically the most affected areas (Wetherby & Woods, 2006). These areas include eye contact, gestures, and vocalization or words in hope to increase different aspect of communication that is usually effected by autism (Wong & Kwan, 2010). In this study the children were involved in a two week program in which therapy occurred five days a week for a 30 minute time span in the child's home with their caregivers present to allow for more carry over (Wong & Kwan, 2010). This treatment was to decide if an intervention that taught parents to follow their child's lead would improve

social communication outcomes (Wong & Kwan, 2010). A delayed treatment control group of the same age was not administered any kind of therapy until a later date than the intervention group and then both groups were analyzed to review any progress that was made and to also look at the effects of delaying treatment in children with ASD. Parents of each group were given specific instruction on different modules to be setup during therapy times which include, setting up the environment, allowing the child to initiate an activity, playing within established routines, facilitating and maintaining states, scaffolding an engagement state, facilitating joint attention, allowing the child to initiate communication, recognizing and responding to the child's joint attention skills, imitating and expanding language, and generalizing skills to other routines (Wong & Kwan, 2010).

Results indicated success with "children with autism improving in language/communication, reciprocal social interaction, and symbolic play. Parents also noted success in improvement of their children's language, social interaction, and their own stress level" (Wong & Kwan, pg 677, 2010). Results also indicated success with the delayed treatment control group, but also showed the success rate was not as high as the intervention group (Wong & Kwan, 2010). This supports the claim that early identification and or diagnosis leads to early

intervention of delayed areas resulting in improvement on areas of delay.

Types of Early Intervention Most Commonly Used with Autism

When early intervention is implemented into the daily life of a child with autism there are certain guidelines as to which programs are to be used. Guidelines are based on programs used in evidence-based practice in which researchers which have produced overwhelming success in the therapy process when working with several different individuals diagnosed with autism. Schertz et al., (2011), talk about a “push down” method of intervention because the therapy tools that are being used presently are being implemented into therapy with older individuals with autism. The programs that this paper will focus on are: Applied Behavior Analysis (ABA) training, naturalistic behavioral program, and Family Involvement. All of these techniques appear to show gains in areas that are lacking in children with autism. Wallace and Rogers, 2010 stated

A review of 32 controlled, high-quality experimental studies revealed that the most efficacious interventions routinely used a combination of four specific intervention procedures, including (1) parent involvement in intervention, including ongoing parent coaching that focused both on parental responses and sensitivity to child cues and on teaching families to provide the infant

interventions, (2) individualization to each infant's developmental profile, (3) focusing on a broad rather than a narrow range of learning targets, and (4) temporal characteristics involving beginning as early as the risk is detected and providing greater intensity and duration of the interventions (pg 1300).

Applied Behavior Analysis Training

ABA training, includes prompting, reinforcement, task analysis, and time delay procedures during a session that can also be used by caregivers throughout the daily living tasks (Boyd et al., 2010). ABA training (Landa, 2007), is commonly used with children with autism, because it offers reinforcement items that motivate children to continue to work combined prompts to elicit the correct response. I believe that the child with autism will improve areas of delay when he or she is provided with an ABA type of therapy.

Intervention is based on trials of antecedent-behavioral-consequence chains (Landa, 2007) that are more clinician led versus client led. Prompting of specific behaviors and communication becomes more predictable and is highly effective when working with new children to the program. One type of ABA training used is one-on-one discrete trial training (DTT), Although ABA training and DTT are commonly used interchangeably, DTT is a specific technique used within the overall form of ABA

training. DTT has been shown to be efficient and effective according to a study by producing about 47% of users to be mainstreamed into a general education program once entering school (Stahmer, Collings, & Palinkas, 2005). This supports the claim that if a child with autism is presented with an ABA style of program, he or she will increase areas of delay. This is important for early interventionists to assure they are practicing in an efficacious manner. It is also important for caregivers to know because they may be more apt to implement these techniques in everyday living situations which will provide for more carryover of behaviors.

Naturalist Behavioral Programs

Naturalistic behavioral programs or intervention has also been referred to as incidental teaching, milieu communication training, and mediated learning (Boyd et al., 2010). Naturalistic programs focus on keeping the child comfortable in their natural environment, such as in the home or community settings, that are natural or normal for a typically developing child of this age with no disabilities present to maximize learning (Schertz et al., 2011). I believe that the child with autism spectrum disorder will improve areas of delay when he or she is provided with naturalistic behavioral program because the will the child feel comfortable in its own environment resulting in more initiated actions to expand on.

Naturalistic behavioral programs allow for child-initiated learning. According to Schertz et al., (2011)

child-initiated actions are driven by internal motivation, fostering natural extensions of learning across settings, people, and time promoting motivation by challenging children just beyond their current mastery level, scaffolding learning, and providing opportunities for success through ample practice. This requires knowledge of developmental and learning patterns unique to toddlers that reveal the importance of play-based practices and strong caregiver-child relationships (pg. 5).

“Schertz and Odum (2007) found that incorporating naturalist interventions during home routines and play is an effective strategy to increase the joint attention and communication skills of toddler-age children with ASD” (as stated in Boyd et al., 2010). According to Schreibman, Kaneko, and Koegel, 1991 (as cited in Stahmer & Aarons, 2009) research has shown that children have a greater chance of learning new material in a natural setting, which also allows for more generalization of new learned skills. On top of a higher success rate, this type of program is also easier for parents or caregivers to implement in natural environments, due to the ease of use. All of this could be due in part by the fact that the child feels comfortable in their own environment while family

members are present allowing for the EI to embed interventions into daily routines (Schertz et al., 2011). This allows for an easier transition for parents and families to continue to work on goals while the clinician is not present.

Incidental teaching is a specific component of naturalistic therapy approaches. Unlike traditional ABA therapies, incidental teaching occurs when the clinician follows the child's lead offering assistance and direction including expansion of topics when the child needs it or will allow for it (Stahmer & Collings, 2005). This information provided supports the claim that if a child with autism will improve areas of delay when he or she is provided with naturalistic behavioral program because the will the child feel comfortable in its own environment resulting in more initiated actions to expand on. This is important information due the fact that this is this type of program is easily transferred into daily living, which makes it more likely for caregivers to transfer from sessions to everyday living tasks.

In a study performed by Rickards, Walstab, Wright-Rossi, Simpson, Reddihough, (2009), children with autism were presented with pre and post assessment along with a home-based intervention program to test the effectiveness of this type of program in regards to early intervention skills. In this study a total of 59 children between the ages of 3-5 attended therapy

session at two different centers, while half of the participants received an additional 40 weekly visits within the home environment (Rickards et al., 2009). The parents of the intervention group that received additional home visits from a speech language pathologist and an occupational therapist, had the opportunity to ask questions about therapy and were given direct instruction as to what they were to do during therapy sessions. Parents were the main source of instruction for the child, but siblings were introduced if able, and the professionals were strictly there to guide the parents (Rickards et al., 2009). Each participant was assessed prior to any intervention, immediately after therapy and then was reassessed one year after therapy ended; results showed that early intervention has a positive impact on individuals with autism as well as improvement particularly in the area of cognitive development in those individuals who received an extra home-based program.

Family Involvement and Family-Professional Partnerships

Family involvement falls in the category of a family centered approach. As stated in Dunst, Trivette, and Hamby, (2007)

A family centered approach is characterized by practices that treat families with dignity and respect; information sharing so families can make informed decisions; family

choice regarding their involvement in and provision of services; and parent/professional collaborations and partnerships as the context for family program relations (pg 370).

Each family member has the right to be involved in the decision making process of their child's intervention services, although sometime families are left feeling discouraged due to their lack of involvement. Family members are active members of early intervention teams including active implementation of behavioral and naturalistic strategies (Boyd et al., 2010). I believe that the child with autism will improve areas of delay when family-involvement due to good family-professional partnerships throughout therapy session. Research has been provided that examines the impact of family involvement in intervention outcome.

Parent involvement is crucial in implementing strategies and new techniques into the daily lives of children with autism. The amount of parent involvement could possibly be the most important of all strategies to allow for carry over. The reason for this is because it allows for more family support due to the focus of the caregivers needs. By allowing this caregivers are able to understand how to teach their child while also being able to sustain challenging behaviors that might be exhibited (Moes & Frea, 2002). It is important to incorporate new material

that has been learned within the different programs to prevent regression in the child's learning.

When family involvement is mentioned as an approach used in early intervention, there are many different things that can happen. It can be as simple as the family implementing what the child is learning during direct therapy hours into everyday living situations, but it can also be direct interventions programs that parents learn how to implement during therapy. This could include the Early Social Interaction program which is a "parent-implemented intervention model designed to individualize social communication goals and monitor child progress, to identify family routines for targeted goals, to teach parents to implement teaching strategies within selected everyday routines, and to support family implementation of intervention" (Wetherby & Woods, pg. 72). A study was conducted to assess the effectiveness of this program used to increase social interactions and address various goals also implemented in therapy sessions. In this study there were three groups with one group of 17 children with under the age of two with the diagnosis of autism spectrum disorder. This group received intervention involving parent training on use of a variety of different interventions that were to be incorporated into their daily routines. The second group consisted of 18 children with ASD in the age range of 25-36 months who have previously been

involved in this kind of intervention. Lastly, there was a control group in which children with autism spectrum disorder did not receive treatment due to the late diagnosis of autism spectrum disorder. All groups were given pre and posttests to measure their social communication skills. Results indicated that by implementing family led therapy, the child has a better understanding of what is accepted in everyday situations and is not so overwhelmed when he or she start school resulting in improved social communication. Also by including the family into therapy sessions the child is more likely to produce the target behavior for the family throughout the day (Wetherby & Woods, 2006). Schertz et al., (2011) argue that

Intervention that focuses exclusively on child's changes without meaningful family involvement may, in fact, compromise outcomes because, in addition to lower levels of parental depression, higher levels of parental involvement are associated with their increased knowledge of ASD, increased parent-child interaction, and improved outcomes for children with ASD (pg. 5).

As stated in Dunst and Trivette, (2009), "Bronfenbrenner noted in his review of early childhood intervention programs, that the likelihood of these programs being successful is dependent, in part, on supporting parents who, in turn, would

have the time and energy to promote their children's development"(pg 120).

Dunst and Dempsey, (2007), looked at parent-professional involvement and how the if there was a poor partnership how the impact might hinder how much a family is involved in their child's interventions. According to Dunst and Dempsey (2007), 150 parents/caregivers of infants, toddlers, and preschoolers presented with disabilities or developmental delays that participate in an early intervention program in western North Carolina. Parents were given the Enabling Practice Scale, Everyday Parenting Scale, and personal control and self-efficacy measures, to assess their family involvement within the early intervention program. Each participant was sent a letter including details of the study and copies of the scales. They were asked to complete the scales and to return them when finished for analysis by the authors (Dunst & Dempsey, 2007). Results indicated small but statistical relevance in regards to those with poor family-professional partnership. Results indicated that with greater family-professional partnership, parents are more likely to feel empowered and in return are involved in the intervention process more so than those who do not feel as if they have any responsibility in the plan of care as well as treatment for their child (Dunst & Dempsey, 2007).

By allowing for a strong family-professional partnership, confidence is gained paired with a sense of empowerment with in family members or caregivers. Results of parental empowerment are increased in likelihood that the caregiver will communicate with professionals about concerns. Family and caregivers will also feel comfortable in continuing to incorporate newly learned skill with their child.

Conclusion

Different research studies have shown that early intervention services on children with autism spectrum disorders show significant improvements of different parts of communication and was shown to be greater than those who did not receive services at an early age (McConkey & Cassidy, 2010). Several aspects of Early Intervention programs definitely benefit children with autism. Dawson (2008) (as cited in Boyd et al., 2010) stated that "with access to high quality interventions in the infant and toddler years, the possibility exists for the prevention of autism or at least a reduction in the severity of children's symptoms over the lifespan because of the malleability of the brain during this critical period of development" (p. 93).

Future research should be directed at finding how early intervention of children with autism spectrum disorders can support parents in times of diagnosis as well as teach

parents/caregivers about the services that are available to their child to help improve the areas of delays that their child might face. By providing information on the services available to the child with autism the caregiver can start to focus on how their child can make progress in the areas of concern and focus on the good rather than the bad.

Future research could also focus on finding out which programs are the most beneficial or if there is a certain combination of programs that should be used in any way to increase progress in children with autism spectrum disorders. Although research has suggested that the programs presented in this paper are beneficial within the early intervention sessions, there was a lack of information as to which program is the most beneficial as well as if pairing of different programs could improve areas of delay.

Yet another area of future research should be directed towards how family support of the immediate family affects the outcome of success within therapy. This paper has provided information on immediate family support such as parent involvement, but there was lack of information on how a child with autism could potentially benefit with help from not only their parents, but also siblings or other family members. It would be interesting to know if even more success could come

from therapy if multiple family members could be involved in the intervention process of a child with autism.

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